NASA TECHNICAL TRANSLATION

REFERENCE DATA ON THE PARAMETERS OF THE ATMOSPHERE IN THE LIVING COMPARTMENTS OF SOYUZ TYPE SPACECRAFT

Translation of "Spravochnyye dannyye po parametram atmosfery zhilykh otsekov korabley tipa 'Soyuz'," Moscow, 1970, 3 pp.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
WASHINGTON, D.C. 20546 DECEMBER 1970

REFERENCE DATA ON THE PARAMETERS OF THE ATMOSPHERE IN THE LIVING COMPARTMENTS OF SOYUZ TYPE SPACECRAFT

ABSTRACT. Parameters of the atmosphere in the living compartments of Soyuz type spacecraft are listed.

The gas parameters of the atmosphere in the living compartments are maintained by a system for providing the required gas composition, and comprising an atmosphere regenerative system, the equipment for maintaining humidity, the equipment for regulating the pressure in the airtight compartments, and the gas analysis equipment. /2*

High capacity chemical absorbers of carbon dioxide are used in the atmosphere regenerative system in addition to the regenerative material which, upon absorption of carbon dioxide and moisture, liberates oxygen.

Gas-liquid heat exchangers-condensers are used to maintain the humidity in the living compartments. Air delivery units, equipped with automatic and manual controls, regulate the pressure, as does the regenerative system that delivers oxygen to the living compartment. The equipment for equalizing the pressure between the compartments in the spacecraft and the docking unit does so in from 1 to 3 minutes. The gas analysis equipment automatically monitors partial oxygen and carbon dioxide pressures, as well as the humidity. The atmosphere in the living compartments in the spacecraft is a nitrogen-oxygen one.

The following parameters are maintained in the compartments: /3

1. absolute pressure, $760\ ^{+140}_{-100}$ mm Hg;
2. partial oxygen pressure, 140 to 300 mm Hg;
3. content of oxygen by volume, up to 40%;
4. partial carbon dioxide pressure, not in excess of 10 mm Hg;
5. relative humidity, 20 to 70% at +20°C;
6. gas temperature in living compartments, 20 ± 5°C;
7. microimpurities harmful to human vital activity in amounts not in excess of:

---

* Numbers in the margin indicate pagination in the foreign text.

carbon monoxide	0.005 mg/liter
ammonia and amines	0.005 mg/liter
hydrogen sulfide and mercaptans	0.0008 mg/liter
acetone	0.003 mg/liter
aldehydes	0.001 mg/liter
acetic acid	0.005 mg/liter
indole	0.0008 mg/liter
hydrocarbons (on conversion to carbon)	0.005 mg/liter
oxides of nitrogen	0.001 mg/liter

Translated for the National Aeronautics and Space Administration under contract No. NASw-2038 by Translation Consultants, Ltd., Arlington, Va.